Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (previously presented). A method of using a degradation level of a process entity within a process plant, comprising:

estimating a level of degradation of the process entity at a first time based on one or more process parameters associated with the process entity;

comparing the estimated level of degradation of the process entity at the first time to a predetermined desired level of degradation of the process entity at the first time; and

altering the operation of the process entity based on the comparison to drive an estimated level of degradation of the process entity at a second time after the first time to be approximately equal to a predetermined desired level of degradation of the process entity at the second time, wherein the predetermined desired level of degradation of the process entity at the second time is greater than the predetermined desired level of degradation of the process entity at the first time.

Claim 2 (previously presented). The method of claim 1, wherein estimating the level of degradation includes using a model of the process entity to estimate the level of degradation of the process entity.

Claim 3 (previously presented). The method of claim 1, wherein estimating the level of degradation of the process entity, comparing the estimated level of degradation of the process entity at the first time to the predetermined desired level of degradation of the process entity at the first time, and altering the operation of the process entity based on the comparison are each repeated at various times during the operation of the process entity for different times.

Claim 4 (previously presented). The method of claim 1, further including designating a fiducial line including a plurality of points, each point defining a predetermined desired level of degradation of the process entity at a different time and wherein comparing includes using the fiducial line to determine the predetermined desired level of degradation of the

process entity at the first time and wherein altering the operation of the process entity includes using the fiducial line to determine the predetermined desired level of degradation of the process entity at the second time.

Claim 5 (previously presented). The method of claim 4, further including altering the fiducial line during operation of the process entity to thereby change the desired level of degradation at one of the first or second times.

Claim 6 (original). The method of claim 4, wherein the fiducial line defines a plurality of points between a clean and a fouled condition of the process entity.

Claim 7 (previously presented). The method of claim 1, wherein altering the operation of the process entity includes using an optimization procedure to alter the operation of the process entity.

Claim 8 (previously presented). The method of claim 1, wherein estimating the level of degradation of the process entity includes estimating a coking level of a furnace within the process plant.

Claim 9 (previously presented). The method of claim 8, wherein altering the operation of the process entity includes changing a flow rate through the furnace.

Claim 10 (previously presented). The method of claim 8, wherein altering the operation of the process entity includes changing a temperature associated with the furnace.

Claim 11 (previously presented). The method of claim 8, wherein altering the operation of the process entity includes changing an amount of steam injected into the furnace.

Claim 12 (previously presented). The method of claim 1, further including using a result of the comparison to produce an index defining a utilization of the process entity.

Claim 13 (previously presented). The method of claim 1, wherein altering the operation of the process entity includes defining a line between the estimated level of degradation of the process entity at the first time and the predetermined desired level of

degradation at the second time and using the defined line to alter the operation of the process entity.

Claim 14 (previously presented). The method of claim 13, wherein using the defined line includes using the slope of the defined line.

Claim 15 (previously presented). The method of claim 1, wherein estimating the level of degradation of the process entity includes collecting data indicative of the process parameters from multiple data sources.

Claim 16 (previously presented). The method of claim 15, wherein collecting data includes collecting process control data and collecting process maintenance data.

Claim 17 (previously presented). A process control system adapted to use a degradation level of a process entity within a process plant that has a processor communicatively connected to multiple process devices, comprising:

a memory;

a first routine stored on the memory and adapted to be executed on the processor to estimate a level of degradation of the process entity at a first time based on one or more process parameters associated with the process entity;

a second routine stored on the memory and adapted to be executed on the processor to compare the estimated level of degradation of the process entity at the first time to a predetermined desired level of degradation of the process entity at the first time; and

a third routine stored on the memory and adapted to be executed on the processor to determine an alteration for the operation of the process entity based on the comparison of the second routine to drive an estimated level of degradation of the process entity at a second time after the first time to be approximately equal to a predetermined desired level of degradation of the process entity at the second time, wherein the predetermined desired level of degradation of the process entity at the second time is greater than the predetermined desired level of degradation of the process entity at the first time.

Claim 18 (original) The process control system of claim 17, wherein the first routine includes a model of the process entity and uses the model of the process entity to estimate the level of degradation of the process entity.

Claim 19 (original). The process control system of claim 17, wherein the first, second and third routines are adapted to operate at various different times during the operation of the process entity.

Claim 20 (previously presented). The process control system of claim 17, further including a fiducial line stored in the memory, the fiducial line including a plurality of points, each point defining a predetermined desired level of degradation of the process entity at a different time and wherein the second routine is adapted to use the fiducial line to determine the predetermined desired level of degradation of the process entity at the first time and the third routine is adapted to use the fiducial line to determine the predetermined desired level of degradation of the process entity at the second time.

Claim 21 (previously presented). The process control system of claim 20, further including a fourth routine stored in the memory and adapted to be executed on the processor to enable a user to alter the fiducial line during operation of the process entity to thereby change the desired level of degradation of the process entity at one of the first or second times.

Claim 22 (original). The process control system of claim 20, wherein the fiducial line defines a plurality of points between a clean and a fouled condition of the process entity.

Claim 23 (original). The process control system of claim 17, wherein the third routine includes an optimization routine adapted to produce an indication of the manner of altering the operation of the process entity to drive the estimated level of degradation of the process entity at the second time to be approximately equal to the predetermined desired level of degradation of the process entity at the second time.

Claim 24 (previously presented). The process control system of claim 17, further including a fourth routine stored on the memory and adapted to be executed on the processor to use a result of the comparison determined by the second routine to produce an index defining a utilization of the process entity.

Claim 25 (previously presented). The process control system of claim 17, wherein the third routine is adapted to define a line between the estimated level of degradation of the process entity at the first time and the predetermined desired level of degradation of the process entity at the second time and to use the defined line to alter the operation of the process entity.

Claim 26 (previously presented). A method of using a degradation level of a process entity within a process plant, comprising:

estimating a level of degradation of the process entity at a first time based on one or more process parameters associated with the process entity;

comparing the estimated level of degradation of the process entity at the first time to a predetermined desired level of degradation of the process entity at the first time; and

using a result of the comparison to produce an index defining a utilization amount of the process entity.

Claim 27 (previously presented). The method of claim 26, further including altering the operation of the process entity based on the utilization index.

Claim 28 (currently amended). [[The]] A method of claim 27, using a degradation level of a process entity within a process plant, comprising:

estimating a level of degradation of the process entity at a first time based on one or more process parameters associated with the process entity;

comparing the estimated level of degradation of the process entity at the first time to a predetermined desired level of degradation of the process entity at the first time;

using a result of the comparison to produce an index defining a utilization amount of the process entity; and

altering the operation of the process entity based on the utilization index, wherein altering the operation of the process entity includes changing the operation of the process entity to drive the utilization index to be a predetermined amount at a second time after the first time.

Claim 29 (previously presented).   The method of claim 26, wherein estimating the level of degradation of the process entity includes using a model of the process entity to estimate the level of degradation of the process entity.

Claim 30 (previously presented). The method of claim 26, wherein estimating the level of degradation of the process entity, comparing the estimated level of degradation of the process entity at the first time to the predetermined desired level of degradation of the process entity at the first time, and using the result of the comparison are each repeated at various times during the operation of the process entity for different times.

Claim 31 (previously presented). The method of claim 26, further including designating a fiducial line including a plurality of points, each point defining a predetermined desired level of degradation of the process entity at a different time and wherein comparing includes using the fiducial line to determine the predetermined desired level of degradation of the process entity at the first time.

Claim 32 (original). The method of claim 31, wherein the fiducial line defines a plurality of points between a clean and a fouled condition of the process entity.

Claim 33 (previously presented). The method of claim 26, wherein estimating the level of degradation of the process entity includes estimating a coking level of a furnace within a process.

Claim 34 (previously presented). The method of claim 26, wherein estimating the level of degradation of the process entity includes collecting data indicative of the process parameters from multiple data sources.

Claim 35 (previously presented). The method of claim 34, wherein collecting data includes collecting process control data and collecting process maintenance data.